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Patients' perspectives on timing of urinary catheter removal after surgery.

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Full study title

Timing of urinary catheter removal after surgery: Identification of factors of importance to patients using a qualitative approach.

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Abstract

Background

Prolonged catheter duration is a major risk factor for catheter-associated urinary tract infections with bacteriuria increasing by 5% per day. We explored patient perception of the care process relating to peri-operative catheterisation to identify patient factors that encourage early removal.

Methods

Semi-structured interviews were carried out during 2010 with three men and seven women incorporating a grounded theory approach. Interviews were transcribed and analysed using constant comparative method and thematic framework analysis.

Results

Catheter duration ranged from one to ten days. Main themes elicited included: lack of understanding of the purpose and catheterisation process, loss of patient autonomy and dignity, and impact of environmental factors.

Conclusion

Lack of knowledge of the catheterisation process amongst participants led to fears and concerns which may contribute to delayed catheter removal. Changes to patient care that are likely to reduce catheter duration include ensuring provision of pre-operative

information, greater patient involvement in catheter removal decisions, and provision of easily accessible toilet facilities.

Keywords: urinary catheter, duration, catheter associated urinary tract infection (CAUTI), nursing, interviews, qualitative methods.

Key phrases

- Prolonged catheter duration increases risk of CAUTI.
- Prior provision of information to patients may prompt decisions of early catheter removal.
- Environmental barriers such as lack of accessible toilets may delay catheter removal.
- Involvement of patients in the decisions around catheter removal may reduce patient anxiety and potentially decrease duration of catheterisation.

Background

Combating catheter-associated urinary tract infection (CAUTI) is a world-wide priority. Approximately 15-25% of hospitalised patients have an indwelling urinary catheter at some time during their hospital stay (Bhardwaj et al., 2010). Catheterisation results in progressive bacterial colonisation of the bladder at a rate of approximately 5% per day (Gokula et al., 2004). The high burden of CAUTI within the UK National Health Service (NHS) led to its prevention being included as one of the *'high impact interventions'* for the *'saving lives'* initiative (Department of Health, 2007 & 2009). Routine placement of urinary catheter for longer than 2 days postoperatively has been found to increase risk of CAUTI and reducing duration of catheterisation is therefore a key target for infection control initiatives (Wald et al., 2008). However, to achieve this goal, a change to standard practice is required.

Current guidance from the UK Department of Health and the United States Centres for Disease Control and Prevention (CDC) emphasises the need to remove the catheter as soon as possible and, for post-operative patients, sets a target of within 24 hours of surgery unless there are indications for continued use (Department of Health, 2007 & CDC, 2009). However a recent audit in a large Foundation NHS Trust found that catheter duration was longer than three days in 63% of patients (Bhardwaj et al., 2010). Further efforts are therefore required to reduce catheter duration towards the recommended level (CDC, 2009 & Huang et al., 2004).

Early catheter removal could be hampered by clinician and patient factors (Phipps et al., 2006). Qualitative research conducted with nurses has highlighted feelings of powerlessness in implementing effective preventative measures exacerbated by shortage of staff (Bridger, 1997) which may impact on patient safety outcomes (Stone et al., 2007). There is limited evidence to inform the patients' perspective of short term urinary catheterisation after surgical procedures.

We aimed to

1. Explore patients' beliefs and perceptions regarding peri-operative urinary catheterisation.
2. Relate their beliefs to current and future practice.

Methods

Research design

This qualitative study was carried out in a neurosurgical ward within a large regional hospital. Ward staff identified patients with a short-term catheter *in situ* following surgery and notified the researcher. Inclusion criteria included; age > 16 years, medically stable, able to give informed consent and take part in the interview, experience of short term (maximum planned duration 14 days) catheterisation. Eligible participants were approached following recovery from surgery and catheter removal,

and provided with a patient information sheet. Consent was obtained to audio record and transcribe the interview. Semi-structured interviews were carried out exploring patient attitudes and beliefs around peri-operative catheterisation and timing of catheter removal in terms of their past and current experience, and future perception.

Sample

Twelve patients were approached, two declined to participate and the remaining ten were interviewed. Recruitment was flexible to expand or reduce the sample size until no new themes developed.

Ethical considerations

The study was approved by a UK NHS Research Ethics Committee (reference number 10-H0907-34) and by the host institution (reference number 5345).

Data Collection

Interviews were performed between July and December 2010 using a schedule consisting of open-ended questions. With occurrence of new themes the interview schedule was adjusted sequentially. Data collection was ceased when no new themes were established (Sim, 1998). This was closely monitored during the iterative data collection and analysis process. Interviews were audio recorded and transcribed verbatim.

Data Analysis

Patient identity was anonymised according to study participant number (P), sex (M/F) and age in years. Interview transcripts were analysed using the constant comparative method (Hewitt-Taylor, 2001) with building of a conceptual thematic framework (Braun & Clarke, 2006). Transcripts were read and reread to allow open coding to develop main themes. The thematic framework was implied by selective reduction of data

(Carley, 1990). Data were coded into categories and merging codes were then divided into main themes and sub-themes.

Results

The median (range) age was 51 years (27 to 65) with duration of catheterisation ranging from one to ten days. Findings highlighted that lack of knowledge around the need and process of catheterisation resulted in patient concerns and anxieties. This was particularly related to uncertainties regarding the insertion and removal process as well as lack of obtaining consent for the catheterisation procedure. Other factors included lack of patient autonomy and dignity and impact of environmental factors. Additional topics revealed symptoms experienced after catheter removal and patient awareness of infection risk related to catheterisation.

Uncertainty caused by lack of information

A number of uncertainties and concerns were elicited. These were associated with lack of information provision about the need for a catheter and how it would be removed:

"I spent the night worried sick thinking that I had to go back to theatre to get it removed. Nobody explained what it was and the fact that it isn't going to slide out when I was getting changed". (P5 F45)

Uncertainties around catheter function were also expressed:

"I didn't understand how it worked. I thought I had to go to the toilet at some stage, until somebody said 'no you don't need to' you've a catheter, that bit should have been explained." (P5 F45)

One participant felt that the need for catheterisation was overlooked during preparation for surgery:

"They've got so much else to tell you about surgery, they forget about catheters. It's an intimate and important procedure, but I think it's overlooked for patients." (P10 F37)

Consent and catheter insertion knowledge

Follow up questioning of participants concerning their feelings about having a catheter under anaesthetic elicited statements around loss of dignity:

"Consent should be written, not verbal; it's your private parts they are touching when you're asleep and you don't know anything about it." (P8 F60)

"Your life's in their hands so I believe that they can do anything they want when they're in charge of you." (P3 M42)

Male patients appeared to be less concerned about waking up with a catheter after surgery than female patients:

"I was surprised to wake up with it but apart from that it didn't really bother me." (P3 M42)

These statements contrast with one patient who had been given explanation pre-operatively about the need for catheterisation

"I spoke to the doc beforehand, he said "you may wake up with a catheter, but that's nothing to worry about as you'll be unable to get out of bed". He pre-warned me which helped." (P7 F54)

One female participant expressed dissatisfaction with information provided to her prior to surgery which instigated the need to search the information online:

"I Googled it and typed in things that would be done during surgery and catheter was one of them." (P8 F60)

Perceptions/ concerns around patient autonomy

Prompting questions concerning patient autonomy and timing of catheter removal evoked a range of statements. Most participants preferred to make their own decisions about the timing of catheter removal:

"I couldn't see why they couldn't take it straight out as soon as the operation was finished with and I could manage myself. Really I should've made that decision." (P3 M42)

Whilst one felt that it should be a mutual decision:

"It should be a joint decision with both parties involved". (P6 F64)

Some expressed the trade off between the convenience of a catheter when confined to bed against the need to ask for help to visit the toilet,

"In future, if I need a catheter more than 2 days and I can manage myself I would have reservations and consider using a bed pan or commode instead. But it's a double edged sword. It's easier to have it in than staff having to run around taking people back and forth to the toilet or giving commodes." (P5 F45)

Whilst others balanced the risks of infection against possible pain and need for re-catheterisation:

"If they said 'right, we're putting this catheter in to relieve you but it might give you an infection then straight away it rings alarm bells and makes you think… is the pain that bad that I can't get out of bed and use that bottle without getting an infection?" (P4 M65)

"I should've been given that choice to make the decision for myself. If I didn't manage without it I was happy to take the risk to have it put back in". (P3 M42)

Dignity

Participants expressed feelings of embarrassment caused by lack of concealment of drainage bags:

"Seeing urine in the bag is quite un-dignified. It should be covered, even by hanging a sheet over it". (P2 F49)

Concerns regarding involuntary leaking of urine at the time of catheter removal were also expressed:

"During my catheter removal I thought the water (urine) was going to come out and I' as going to wet the bed. It would've been horrendous and mortifying. When in reality this isn't the case but nobody told me". (P5 F45)

Feelings of embarrassment were brought by the need for the drainage bag to be emptied by staff members of opposite sex:

"*If it was a man you wouldn't feel as embarrassed, would you? But if it's a woman you're sheepish and embarrassed but it needs to be done."* (P4 M65)

Others expressed the view that not having a catheter may also be detrimental:

"I wasn't so embarrassed about the catheter because I'd rather have that than keep weeing the bed, and the thought of been hoisted with so many people around is undignified because I am quite big." (P2 F49)

Process of catheter removal and environmental impact

There were mixed statements about the process of catheter removal. Lack of knowledge led to statements describing fear, distress and anxiety.

"She (nurse) just said "I've come to remove your catheter" without explaining how. I thought, 'this is going to be horrendous', should I be going back to theatre to get this removed?" (P5 F45)

I was scared stiff overnight having it removed because I didn't have a clue how it would come out. I know it's nothing now but I didn't know at the time. It was really distressing. Any first is frightening for a patient!" (P10 F37)

Four of the ten participants experienced symptoms of urinary infection after catheter removal such as discomfort and difficulty passing urine.
"At the end of having a pee I got a strange sensation of burning and round here (pointed to bladder area) *felt as if it was full of water and very uncomfortable."* (P4 M65)

Three patients with previous experience of CAUTI requested early catheter removal in advance of direction by clinical staff:
"I asked for it (to be removed) *at that stage because I was mobile and didn't want it to be left in any longer than I absolutely had to for infection reasons from my previous experience".* (P10 F37)

This contrast with another participant who required treatment for CAUTI following a nine day period of catheterisation:
"I had no idea that delay in catheter removal would give me an infection. No one told me" and *"They stopped me from going home because of water infection."* (P4 M65)

Some participants felt that the reason for their prolonged catheterisation was lack of easily accessible toilet facilities in the vicinity which discouraged early removal of the catheter.
"I might have gone to the toilet more but I could never get in. There's one male toilet in here for all these blokes. Nurses- God bless them - have even taken me down to the ladies toilet." (P4 M65)

Most patients supported use of alternative methods such as use of a commode or bed pan:

"On the hind sight, if the catheter was left in longer than I needed, I'd be asking for it to be taken out and try my best to get up and use a bottle rather than have the infection, which I did (suffered from CAUTI)! I am all for prevention me!" (P4 M65)

"If you are aware of the risk then I think you'd have it taken out even if it means using a commode or other means – its better knowing how to prevent infection because it just adds to your recovery time!" (P10 F37)

In contrast, one female patient expressed that she would rather take the risk and leave the catheter in longer:
"I preferred not to have to think about it. I had too many other things to worry about like sickness and pain. I would risk infection to take away another stress." (P2 F49)

Patient recommendations

When asked directly about catheter information provision, nine participants stated that no explanation or information had been given regarding benefit and possible harm of catheterisation. The majority expressed the preference to receive information in a booklet form at the time of pre-assessment for surgery whilst one participant suggested that it could be posted to patients with their admission details:
"A booklet that's something patients can see and discuss with staff when they attend for pre-assessment explaining what a catheter is, a diagram, how it works, what it looks like and maybe something on how it stays in, (in case your frighten to touch it) to make patients aware because having a catheter after waking up from surgery might be normal to staff but wasn't for me." (P7 F54)

"Paperwork should come in the post with everything concerning your surgery including catheter, so that patients can read it in their own time and ask question when they come to hospital to get checked." (P8 F60)

Discussion

Short term catheterisation is a routine part of care for many surgical procedures and its duration is governed by a number of factors. This study demonstrates that patients have a lack of knowledge concerning catheterisation and limited involvement in the decision to remove the catheter. Both these factors may contribute to prolonged catheterisation.

Lack of awareness amongst patients concerning the link between catheter duration and CAUTI risk may counter initiatives aimed at early removal. This study suggests that once armed with relevant knowledge, patients would be motivated to contribute to planning of catheter removal and would prefer to be more involved in decisions around catheter use.

Findings in context of previous work

Our findings echo those of Logan et al. (2008) who reported that patients learning intermittent self-catheterisation experienced feelings of anxiety, embarrassment and loss of control in making decisions and are in agreement with Baillie (2009) who found that urinary catheters are associated with loss of dignity amongst patients, the degree of which is underestimated by staff.

Although urinary catheterisation is an accepted part of surgical care, the process of catheter removal has been neglected (Saint et al., 2005). Other research highlights the role of nurses as patient advocates to ensure appropriate use and duration of catheters to reduce CAUTI risk, and unnecessary health care costs (Fakih et al., 2008, Apisarnthanarak et al., 2007 & Blodgett, T.J. 2009). Studies have shown that computer based catheter ‘stop orders’, prompting physicians with daily reminders from nurses reduced catheter duration and incidence of CAUTI (Cornia et al., 2003, Crouzet et al., 2007 & Huang et al., 2004). These studies show that collaborative action by staff can reduce catheter duration. We would add that inclusion of the patient in this process is

likely to give further benefit. Mobilising the desire and motivation of patients to be more involved in decisions around timing of catheter removal gives a further dimension to drive change in established patterns of care. Not all patients will feel comfortable with taking on this responsibility however emphasising a need to tailor care to the individual. Patient concerns and anxieties regarding catheterisation stemmed from a lack of information linked to patient consent for peri-operative catheterisation. This is at variance with NHS guidance emphasising the benefits of consent for catheterisation even when it is part of an operative procedure (RCN, 2008). Our findings suggest that patient views are in line with this guidance.

Our participants who experienced symptoms of UTI following catheter removal were unaware of the link to catheterisation. This finding is supported by a recent patient knowledge survey about indwelling catheters (Greer et al., 2011) which recommended better patient information to raise awareness of CAUTI. The perception of our study participants changed when they were made aware of CAUTI risk and this may help motivate consideration of earlier catheter removal (RCN, 2008 & Tenke et al, 2008).

The need for accessible toilets in hospital wards to discourage catheter use has been previously noted (Eastern Health, 2008). The present study was conducted in a hospital built in the 1960's and the service has subsequently transferred to a new facility with improved toilet access.

Strengths and limitations

The small sample of patients from one surgical specialty is a limitation. Other types of surgery may engender different anxieties and attitudes to catheterisation. To allow transferability to other settings (Lincoln & Guba, 1985) it would be necessary to expand the study to both medical and other surgical wards and to incorporate methods such as questionnaires to increase sample size.

The study followed a standard method for data organisation according to attitudes, feelings, issues and topics which participants identified as being important to patients. (Taylor & Bogdan, 2000).

Recommendations for further research

Further work is required to explore clinicians' views on consent, duration and process of catheter removal. A future step could consider development of behaviour change interventions using a Theoretical Domains Framework approach (Michie et al., 2008).

Conclusion

Provision of adequate information to patients who need short-term catheterisation linked to formalised consent will increase knowledge and may help reduce catheter duration. This will be assisted by encouraging patients to be more involved with catheter care decisions post-operatively. The information should include explanation of the link between catheter duration and CAUTI risk.

Simple measures should be developed to conceal bladder drainage equipment and enhance dignity. Staff awareness is required to consider patient anxiety and uncertainty concerning urinary catheterisation rather than regard it as routine. Catheter care should be individualised as much as possible within service constraints with regular opportunity given to patients to question the need for ongoing catheterisation.

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